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SUMMARY OF TRADE AND TARIFF INFORMATION

Prepared in Terms of the Tariff Schedules of the United States

TIRES AND TUBES
TSUS Item Nos. 772.45-.60

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FOREWORD

Each Summary of Trade and Tariff Information is part of a series published by the United States International Trade Commission to provide information on conditions of competition between domestic and foreign products. This report, generally covering the period 1975 through 1979, represents one of many being published in the current series of summaries.

This series provides comprehensive coverage of products uses, the domestic industry, U.S. consumption, production, and trade, and the domestic and international markets in each commodity area. The summaries are cast in terms of the eight schedules of the Tariff Schedules of the United States (TSUS).

The current series will consist of approximately 600 individual reports. The Commission will issue updates statistical tables and industry status reports as appropriate for individual summaries. The overall program will run several years, ultimately covering all items of the TSUS.

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Executive Summary

This summary covers tires and tubes of rubber or plastics, as provided for in items 772.45-.60 of the Tariff Schedules of the United States (TSUS). These products are used worldwide on every type of vehicle imaginable. They provide a cushioned ride, added absorption of shocks, and traction for the designated vehicle. The major producing and consuming nations are the United States, France, West Germany, Japan, and the United Kingdom. However, production in these countries is consumed mostly within the respective domestic markets.

The U.S. customs treatment of tires and tubes includes nine tariff classifications; under three of the classifications, items currently enter the United States free of duty from countries entitled to Most-Favored-Nation (MFN) treatment; three other classifications are scheduled for staged reductions in their MFN rates. Foreign customs treatment generally is based on the classifications of the Customs Cooperation Council Nomenclature (CCCN), formerly the Brussels Tariff Nomenclature (BTN).

Although at one time Akron, Ohio was the site of the largest concentration of tire and tube production in the United States, the industry today is widely spread geographically. Currently, there is only production of experimental tires in Akron; the Gulf Coast States are producing the largest numbers of tires and tubes for consumption of any region of the United States.

The demand for tires and tubes has generally been on the decline since the United States experienced its second "oil shock" in 1977. In addition to the resulting decline in driving miles, recent developments have added additional miles to the lifetime of the average tire, further decreasing demand.

As the U.S. market has shifted to demand a much higher percentage of radial tires, the market for the imported product has increased from 64 million units in 1975 to 128 million units in 1979. Foreign producers until 1979 enjoyed a significant advantage over domestic producers as they generally had between 10 and 20 years experience in producing radial tires, years when the U.S. industry continued its emphasis on bias-ply and similar outmoded types. While production has experienced no real growth since 1977, imports of tires and tubes have increased significantly, from 64 million units in 1975 to 128 million units in 1979.

Exports of tires and tubes, while remaining fairly insignificant when compared with domestic consumption, have increased in terms of quantity, from 14 million units in 1975 to 19 million units in 1979. The ratio of exports to apparent consumption actually decreased from 5.43 percent in 1975 to 5.27 percent in 1979.

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Commodity	TSUS item No.
Tires, and tubes for tires, of rubber or plastics:	
Pneumatic tires:	
Airplane	772.45
If certified for use in civil aircraft	772.46
Bicycle	772.48
Designed for tractors or for horticultural or agricultural machinery or implements	772.50
Other	772.51
Tires, other than pneumatic tires	772.54
Tubes:	
Bicycle	772.57
Designed for tires provided for in 772.50	772.59
Other	772.60

Note.--For the statutory description, see excerpts from the Tariff Schedules of the United States Annotated, (1981), reproduced in app. A. A concordance of the TSUS items included in this summary with related categories in other production, export, and import nomenclatures is found in app. B.

The products covered in this summary include tires, and tubes for tires, of rubber and plastics. Standard Industrial Classification (SIC) industry No. 3011 includes all of the items covered in this summary along with a small number of products associated with producers of tires and tubes, such as tire repair and retreading materials.

Tires

Tires can be subdivided into functional groups, such as passenger car tires, truck and bus tires, airplane tires, motorcycle tires, and tires for farm use. The majority of tires produced worldwide today are pneumatic and tubeless in design, although certain types of tires are still designed for use with tubes.

Generally, tires are constructed from plies of rubberized fabric which are wrapped around an expandable cylinder-shaped drum. Steel wire is placed around the edge of the fabric, encircling the drum. This wire, known as the tire "bead," will form the support for the tire, as well as holding it securely to the rim of the wheel. The sides of the fabric plies are then

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wrapped around and over the beads. The tread and the sidewall are also wrapped around the drum covering the fabric between the steel wire beads. The drum is then collapsed and the tire removed and prepared for vulcanization. The last major step before vulcanization involves the molding of a set design into the tread. The vulcanization process then converts the rubber and fabric into tough, highly elastic products. This process also bonds the various parts of the tire into one singular unit.

Although the procedure just described is similar for all types of tires, certain tires which are designed with specific applications in mind may vary significantly in their methods of production. A motorcycle tire may consist of only 10 components while an earth mover tire may be composed of more than 175 individual parts. A tire of this type may contain 40 layers of textile in the carcass plies 1/ and have a tread weighing more than 1,000 pounds. The overall weight of the tire may exceed 3,000 pounds.

Designers of specialty tires must weigh the needs of vehicle manufacturers and consumers, generally settling on a compromise which emphasizes such characteristics as safety and tread life. Factors taken into consideration include:

1. Vehicle weight distribution, which determines the load-carrying capacity of the tire and the operating inflation pressure;

2. Axle height and clearance for the chassis, suspension, and braking system, which determines the diameter, section width, and bead diameter of the tire;

3. The vehicle suspension system, which determines the basic tire construction (radial or bias-ply construction);

4. The speed capability and operating conditions (in relation to construction, composition, and tread pattern).

Depending upon the decisions of the tire designers, different types of tires are selected for specific functions.

Solid tires.--Solid tires comprise approximately 2 percent of the overall domestic tire market in terms of value. Sizes range from caster-size tires which are used on lawn mowers, strollers, grocery carts, and so forth, up to passenger car and truck-size tires. Within this category there are also semi-pneumatic tires. These are solid except for a small air pocket which

1/ Carcass plies of large-sized tires are equivalent in function to plies of normal-sized tires.

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cushions the ride of the vehicle on which these tires are used. The semi-pneumatic tires are often reinforced with supporting materials such as steel or fiberglass.

Pneumatic tires.--Pneumatic tires, which comprise the remaining 98 percent of the domestic tire market, are a rubber and fabric cushion which, when filled with air up to a designated pressure range, produce traction and act as a shock absorber for a vehicle. There are both tubeless tires and tires which require tubes, although the market trend for some years has been toward tubeless tires. Primary consumer applications for pneumatic tires include automobile, motorcycle, bicycle, truck, and bus tires. In addition, there is significant production of pneumatic aircraft, industrial, farm, and utility vehicle tires.

Although the physical components of all pneumatic tires are the same, there have been significant improvements in the various components. These changes, which have in most cases upgraded certain characteristics, have not always been rapidly accepted by the consuming public or even major portions of the industry. The most radical alterations in the construction of the tire have involved the tire "cord." This cord of rubberized fabric forms the basic tire structure. Conventional bias-ply tires have their cords oriented at an angle of approximately 55 degrees to the wheel axle of the vehicle (see diagram on the following page). There are either 2 or 4 plies of material comprising the cord, usually of nylon, rayon, or polyester.

The first major change in the cord structure involved the addition of belts which circle the tire, lying between the plies of the cord and the tread. These belts are usually composed of fiberglass and have significantly improved several important properties. Belted bias-ply tires average a 20 percent longer tread life than conventional tires, offer a much better resistance to blowouts, decrease the stopping distance of vehicles, and provide increased gasoline mileage as a result of a much decreased rolling resistance.

The most significant change in the cord structure occurred in 1946 when the patent on the radial-ply tire was filed. In the radial tire, the cords run arcwise radially from bead to bead. The cords may consist of textiles, natural or synthetic fibers, or steel. In radial tires designed for passenger cars, there are usually one or two plies of fabric, either rayon, nylon, or polyester. In radial truck tires, as well as any larger load-bearing tire, there is only a single ply of steel cord. The casing is then belted by several layers of material, usually steel or fiberglass, and placed at different angles to reinforce and stabilized the tread. The advantages of the radial technology over the bias-ply construction are numerous and include:

1. Dissociation of the functions of the sidewalls and the tread;

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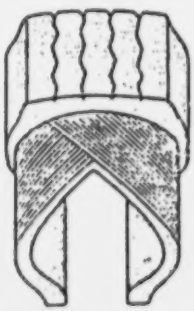
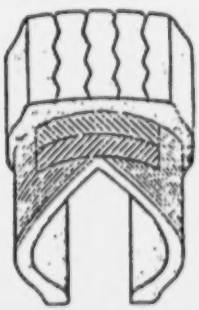
BIAS-PLY CONSTRUCTION



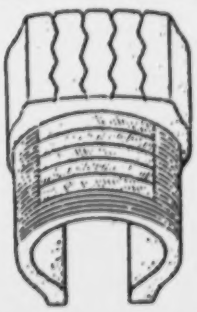
Note plies at 55° angle.

BIAS-BELTED CONSTRUCTION



Note addition of belts.

RADIAL CONSTRUCTION



Note arcwise orientation of plies, with the addition of belts.

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2. Elimination of friction between plies of the cord;

3. Stabilizing the portion of the tire (tread) which contacts the road surface.

The performance consequences of these technological advances include:

1. Doubling of the mileage of the bias-ply tire,
2. Improving traction,
3. Increasing riding stability,
4. Reducing heat buildup in the tire, thereby increasing the lifetime of tire cord,
5. Increasing gasoline economy owing to a much improved rolling resistance (radial tires may be inflated to higher air pressures because of their radial construction), and
6. Improving the comfort and safety of the ride owing to the greater vertical flexibility.

The tread on pneumatic tires also varies with respect to the function of the tire. The most obvious example is the difference in tread between "regular" passenger car, truck, and bus tires, and tires designed for use in snow. "Snow tires" have significantly deeper tread for the express purpose of increasing traction. Conventional snow tires afford a vehicle 50 percent more pulling ability on loosely packed snow and 30 percent more pulling ability on glare ice. Snow tires, however, give no advantage in stopping on glare ice.

Additionally, there is variation in the rubber material used in pneumatic tires. A significant share of the rubber used in tires is found in the tread material which is bonded to the tire casing by the vulcanization process. The majority of the tread rubber employed today is synthetic styrene-butadiene rubber (SBR). Only in certain truck and bus-sized tires are treads of natural rubber still used. Natural rubber tread has a higher resistance to heat buildup than does SBR, which consists of randomly linked units of styrene and butadiene. In smaller sized tires, the synthetic rubber tread provides equal or superior performance.

Tubes

The primary purpose of an inner tube is to hold air under pressure. To fulfill this requirement, inner tubes must not stretch or flow excessively in order to prevent bubble formation; they must not harden or crack with age; they should be tear resistant; and they should have a low diffusion rate with respect to air.

The last major change in the production or formulation of inner tubes occurred approximately 30 years ago, when butyl rubber replaced nitrile rubber

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as the preferred material. (Diffusion of air through butyl rubber is minimal.) The basic production technology has remained unchanged since the mass production of inner tubes began. The procedure of extruding lengths of tubing material, cutting, and splicing them into the basic inner tube structure remains the simplest and most cost-effective method of production. The advent of the radial tire has not radically changed either construction or production procedures; although there are specific tubes designed for conventional or bias-belted tires. The special care in the manufacturing procedure for tubes designed for radial tires is necessary because of the increased degree of punishment the radial tire absorbs.

Inner tubes are currently being produced mainly for use in passenger car tires, truck and bus tires, and utility (industrial and agricultural) tires. Smaller numbers of tubes are being produced for use in bicycle tires and aircraft tires.

Customs Treatment

U.S. customs treatment

The selected provisions of the TSUS reproduced as appendix A show the current rates of duty which apply to tires and tubes. Imports from those countries having most-favored-nation status are dutiable at the rates shown in column 1. 1/ Imports from countries designated as less developed developing countries (LDDC) may be entered into the United States at reduced rates of duty. 2/ Column 2 rates apply to imports from certain countries under Communist domination or control. 3/

1/ The rates of duty in rate of duty column numbered 1 are Most-Favored-Nation (MFN) rates, and are applicable to imported products from all countries except those Communist countries and areas enumerated in general headnote 3(f) of the TSUS. However, such rates would not apply to products of developing countries which are granted preferential tariff treatment under the GSP or under the "LDDC" rate of duty column.

2/ The rates of duty in rate of duty column "LDDC" are preferential rates (reflecting the full U.S. MTN concession rate for a particular item without staging) and are applicable to products of the least developed developing countries designated in general headnote 3(d) of the TSUS which are not granted duty-free treatment under the GSP. If no rate of duty is provided in the "LDDC" column for a particular item, the rate of duty provided in column numbered 1 applies.

3/ The rates of duty in rate of duty column numbered 2 apply to imported products from those Communist countries and areas enumerated in general headnote 3(f) of the TSUS.

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Reference is also made to the eligibility for duty-free treatment under the Generalized System of Preferences (GSP). 1/

The duty rate structure of tires and tubes is fairly complex. As shown in the table on the following page, there are nine tariff classifications for tires and tubes with various rates of duty, three of which are currently free of duty under column 1. Three of the currently dutiable TSUS items, 772.45, 772.54, and 772.60, are scheduled for staged reductions in their rates of duty negotiated under the MTN. All three of these items are eligible for GSP treatment. The previous rate, prior to MTN concessions, the present rates, and the negotiated rate of duty (to be reached through staged reductions by Jan. 1, 1987) are also summarized for each of the affected TSUS items in the table on the previous page.

There are virtually no nontariff restrictions placed on imported tires and tubes by the United States. However, since January 12, 1979, a countervailing duty of 0.5 percent has been in effect against one Korean producer of bicycle tires and tubes. Between 1975 and 1979, two petitions were received at the U.S. International Trade Commission which initiated investigations involving bicycle tires. The first investigation, No. TA-201-33, under section 201 of the Trade Act of 1974, was initated by a petition filed on behalf of the only domestic producer. It was determined that the domestic industry was being seriously injured or threatened with serious injury by increased imports of bicycle tires, as well as tubes. The second investigation, No. AA1921-193, under the Antidumping Act, 1921, as amended, was received by the Commission on December 26, 1978. It was determined in this investigation that the U.S. industry was being injured by less-than-fair-value imports of bicycle tires, as well as tubes, from the Republic of Korea (Korea).

Foreign customs treatment

Outside of the United States and Canada, the Customs Cooperation Council Nomenclature (CCCN), formerly the Brussels Tariff Nomenclature (BTN), is used as the basis for most countries' tariff classifications relating to tires and tubes. In the CCCN, tires and tubes are classified in heading 40.11, "Rubber tyres, tyre cases, interchangeable tyre treads, inner tubes and tyre flaps, for wheels of all kinds."

1/ The Generalized System of Preferences, under title V of the Trade Act of 1974, provides duty-free treatment of specified eligible articles imported directly from designated beneficiary developing countries. GSP, implemented by Executive Order No. 11888 of Nov. 24, 1975, as amended, applies to merchandise imported on or after Jan. 1, 1976, and is expected to remain in effect until Jan. 4, 1985.

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Tires and tubes: U.S. rates of duty, past, present, and negotiated, by TSUS items

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Present col. 1 rate of duty 2/	Negotiated col. 1 rate of duty 2/	Col. 2 rate of duty	GSP eligibility
	Tires, and tubes for tires, of rubber or plastics:					
	Pneumatic tires:					
772.45	Airplane	5% ad val.	3.8% ad val.	Free	30% ad val.	Yes
772.46	If certified for use in civil aircraft.	4/	Free		30% ad val.	No
772.48	Bicycle	5% ad val.	5% ad val.		10% ad val.	No
772.50	Designed for tractors provided for in item 692.34 or for agricultural or horticultural machinery or implements provided for in item 666.00.	Free	Free		Free	No
772.51	Other	4% ad val.	4% ad val.		10% ad val.	Yes
772.54	Tires, other than pneumatic tires.	5% ad val.	3.8% ad val.	Free	25% ad val.	Yes
	Tubes:					
772.57	Bicycle	15% ad val.	15% ad val.		30% ad val.	No
772.59	Designed for tires provided for in item 772.50.	Free	Free		Free	No
772.60	Other	5% ad val.	4.7% ad val.	3.7% ad val.	25% ad val.	Yes

1/ Rate effective prior to Dec. 31, 1979.
2/ Rate effective Jan. 1, 1981.
3/ Rate negotiated under the Multilateral Trade Negotiations in Geneva (Tokyo round), to be achieved through 8 annual staged reductions. Also current rate for LDDC's.
4/ TSUS item did not exist prior to Jan. 1,1980.

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In most countries, there are very few tariff provisions under the general classification of tires and tubes. The two major exceptions to this rule are the United States (discussed previously) and Mexico. A summary of the Mexican classification system, and those of Canada, the European Community (EC) and Korea, major markets for U.S. exports of tires and tubes, appear in the table on the following page with the respective rates of duty both currently in force and negotiated under the MTN.

There are at present no known significant nontariff barriers influencing the export of U.S.-manufactured tires and tubes.

U.S. Industry

Basic data and information

Tires.--There are currently 14 firms producing tires in the United States. Within these 14 firms, there were 91 establishments as of 1977. 1/ There are approximately 10 less establishments currently operating, a direct result of the economic slowdown in 1979 and 1980 depressing replacement tire sales and the depressed sales of original equipment (OE) tires to vehicle manufacturers. At one time, the majority of establishments engaged in the manufacture of tires were located in Akron, Ohio. 2/ At present, however, the industry has spread its production facilities throughout the country, with a cluster of establishments in the Southern States, along the gulf coast. The last remaining plant in Akron for the commercial production of tires closed its doors in 1980. The only Akron plant still in operation produces experimental tires only.

The 14 firms actively producing tires can be divided into four categories. The two top producers, the "giants," together account for more than half of all domestic tire sales. The next three largest producers are "large, diversified corporations" and account for another 33 percent of tire sales in the United States. The remaining domestic producers are either subsidiaries of "foreign companies" or are "smaller domestic tire specialists," and together account for the remaining 15 percent of domestic production.

1/ The terms "firm" and establishment" are terms which are used by the Bureau of the Census to connote a company and a production facility, respectively.

2/ Although the Census of Manufacturers does not chronicle producer information for cities, data for the state of Ohio is available. The ratio of tire and tube establishments actively producing tires in Ohio to those functioning in the rest of the United States steadily decreased from 24 percent in 1954 to 11 percent in 1977. The similar ratio for number of employees has decreased from 42 percent in 1954 to 17 percent in 1977.

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Tires and tubes: Selected rates of duty, present and negotiated, in principal foreign markets for U.S. exports

Market	Description of commodity and foreign tariff item No.	Present rate of duty 1/	Negotiated rate of duty 2/
Canada	Pneumatic tires, and tubes:		
	Agricultural tires (61810-1)	Free	Free
	Other pneumatic tires and tubes (61815-2).	17.5% ad val.	10.2% ad val.
	Other pneumatic tires and tubes (61815-1).	17.5% ad val.	10.2% ad val.
EC	Solid or cushion tires of rubber (40.11A).	7.5% ad val.	5.1% ad val.
	Tubes for tires (40.11B)	9% ad val.	5.8% ad val.
Japan	Tires and tubes of more than 101.6 mm in nominal width (40.111):		
	Pneumatic tires	8% ad val.	5.8% ad val.
	Other	9.5% ad val.	6.5% ad val.
	Other tires and tubes (40.112)	9.5% ad val.	4.2% ad val.
Republic of Korea 3/	Tires and tubes:		
	For use on aircraft (40.111)	Free	-
	For tractors only (40.112)	10% ad val.	-
	Other (40.113)	80% ad val.	
Mexico 3/	Motorcycle tires (40.11A001)	10% ad val.	-
	Aircraft tires (40.11A002)	5% ad val.	-
	Tires of interior diameter less than 35 centimeters, nspf (40.11A003).	50% ad val.	-
	Solid tires (40.11A004)	50% ad val.	-
	All other pneumatic tires, nspf (40.11A005, A999).	50% ad val.	-
	Tractor, heavy machinery, mass transit, and extra large tires (40.11A006,7,8).	5% ad val.	-
	Aircraft, tractor, heavy machinery, and industrial tubes (40.11B001, 4).	5% ad val.	-
	Other tubes (40.11B002,3)	60% ad val.	-

1/ Current duty rates applicable to imports from the United States.
2/ Rates negotiated under the Multilateral Trade Negotiations (MTN) in Geneva.
3/ Country did not participate in MTN.

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In terms of concentration ratios of all goods produced by the industries classified in SIC No. 3011, the four largest companies account for more than 73 percent of industry shipments. The eight largest companies account for a total of about 90 percent of shipments.

Employment in the tire industry declined during 1979 and 1980 because of closings of 14 tire plants. As of 1978, there were approximately 125,000 employees in the U.S. tire industry, 73 percent of whom were considered production workers. This reflects an increase of approximately 11.3 percent compared with data for 1968, when the tire industry employed approximately 113,000, 70 percent of whom were considered production workers. Employment reached a peak in 1974, before the initial energy crisis, when there were more than 130,000 employees. By 1976, the number of employees had dropped to about 98,000. The majority of those laid off were production workers.

Various industry estimates agree that there has been a fairly steady increase in productivity since 1967. An index of output per production-worker-hour based on official statistics from the Bureau of the Census, U.S. Department of Commerce, reached 121.7 (1967=100.0) in 1978. An index derived from industry source statistics was valued at 129 for the same period.

As the tire industry is highly labor intensive, slowdowns in the industry have often caused major layoffs, and therefore sharp decreases in production. Examples of this behavior were evident during the period 1974-77, when the first gasoline crisis coincided with a nationwide strike against tire manufacturers. Official statistics from the U.S. Department of Commerce show that output in terms of quantity decreased from 2,022 metric tons in 1973 to 1,966 metric tons in 1974 and 1,644 metric tons in 1975. Production-worker-hours decreased during the same period from 173 million in 1973 to 153 million in 1975.

Tubes.--According to the 1977 Census of Manufactures, there were 13 firms manufacturing inner tubes for passenger car and motorcycle tires with shipments of $100,000 or more. Of these 13 firms, only 12 establishments produce inner tubes as their primary product, and 10 establishments specialize in inner tubes at a rate of at least 75 percent. There are employed approximately 7,000 workers within the previously described 22 establishments, more than 6,000 of whom are production workers. These production facilities are located throughout the United States with no concentration in any particular geographic area.

The ratio of annual production volume of inner tubes to pneumatic tires has been slowly and steadily declining since the advent of the tubeless tire. This ratio has decreased from 35 percent to 28 percent between 1963 and 1977. Industry sources anticipate the continuation of this trend.

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Financial information

The following financial data describing the state of the tire and tube industry were obtained through several industry sources. Total sales in the tire and tube industry were valued at $20,881 million between October 1979 and October 1980. Sales for the corresponding periods in previous years were as follows: $21,350 million in 1979, $18,976 million in 1978, and $17,586 million in 1977. These figures reflect a 21 percent increase in value of sales during this 4-year period. These values, however, are not corrected for inflation.

Earnings for the five largest producers of tires and tubes ranged from $36.2 million to a lost of $53.7 million for the second quarter of 1980. Profits from the entire industry were down by 94 percent from the corresponding period of 1979. Sales for the five largest producers declined by approximately 9 percent between 1979 and 1980, while sales of all domestic producers declined by 6 percent for the same period. Profit margins in second quarter 1980 averaged only 0.2 percent for the entire industry, as 2 of the 5 largest producers experienced losses. In contrast, profit margins in second quarter 1976 averaged 2.6 percent and sales were increasing at that time at a rate of 11 percent per year. 1/

As evidenced by the preceding statistics, several companies stil remain profitable, although at levels significantly below corresponding periods of previous years. Other firms which at one time were profitable are currently operating at a loss.

Prices and marketing

Prices of tires and tubes have risen negligibly during the past decade when compared with the overall rate of inflation during the same period. Unit values of tires and tubes derived from data published by the Bureau of the Census, in the 1977 Census of Manufactures are summarized in the following tabulation:

1/ Business Week, Aug. 18, 1980, p. 75, Aug, 16, 1976, p. 88.

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Product category	Estimated unit value of product shipments	
	1972	1977
Passenger car pneumatic tires	1/ $14.40	1/ $18.55
Truck and bus tires (including off-the-highway pneumatic tires	35.90	61.88
Other pneumatic and all solid tires	4.66	1/ 6.16
Inner tubes	2.04	4.78
Total	12.04	17.86

1/ Including motorcycle tires.

The greatest variation in unit values, involving truck and bus tires and inner tubes, may be partially attributable to the ongoing trend toward the higher priced tubeless tires. Truck and bus tires have had their component materials strengthened in lieu of tubes, which led to the largest sized inner tubes (industrial and utility-sized) possessing a greater market share in 1977 than in 1972, compared with smaller sized truck, bus, and passenger car tire inner tubes.

The prices for tires and tubes are determined primarily by the market through which the items are purchased and how many intermediaries handle the product. Consumers pay the highest prices for tires and tubes which are obtained through the OE market, through motor vehicle retailers. Tires and tubes are least expensive for a consumer when obtained through independent dealers, who often obtain their stock directly from the manufacturers. Other outlets for tires and tubes have prices set by a parent firm. Examples of these outlets include service stations (oil companies) and chain stores. Independent service stations and other sales outlets must sell the items at higher prices than independent dealers, since they have no direct contact with manufacturers and must deal through middlemen.

The channels of distribution through which consumers obtain tires and tubes all involve middlemen. As can be seen in the two diagrams on the following pages, with one exception, manufacturers of tires do not sell products directly to the consumer. This exception to the rule (not in diagram) involves contracts which trucking firms and bus companies may have with tire manufacturers, although the majority of their purchases are through independent dealers. Domestic manufacturers sell approximately 25 percent of their products to automotive manufacturers, through the OE market. The remaining 75 percent of production goes into the replacement tire market via several channels. The middlemen between the manufacturer and the consumer include independent dealers, chain stores, service stations, company stores, and other less significant channels.

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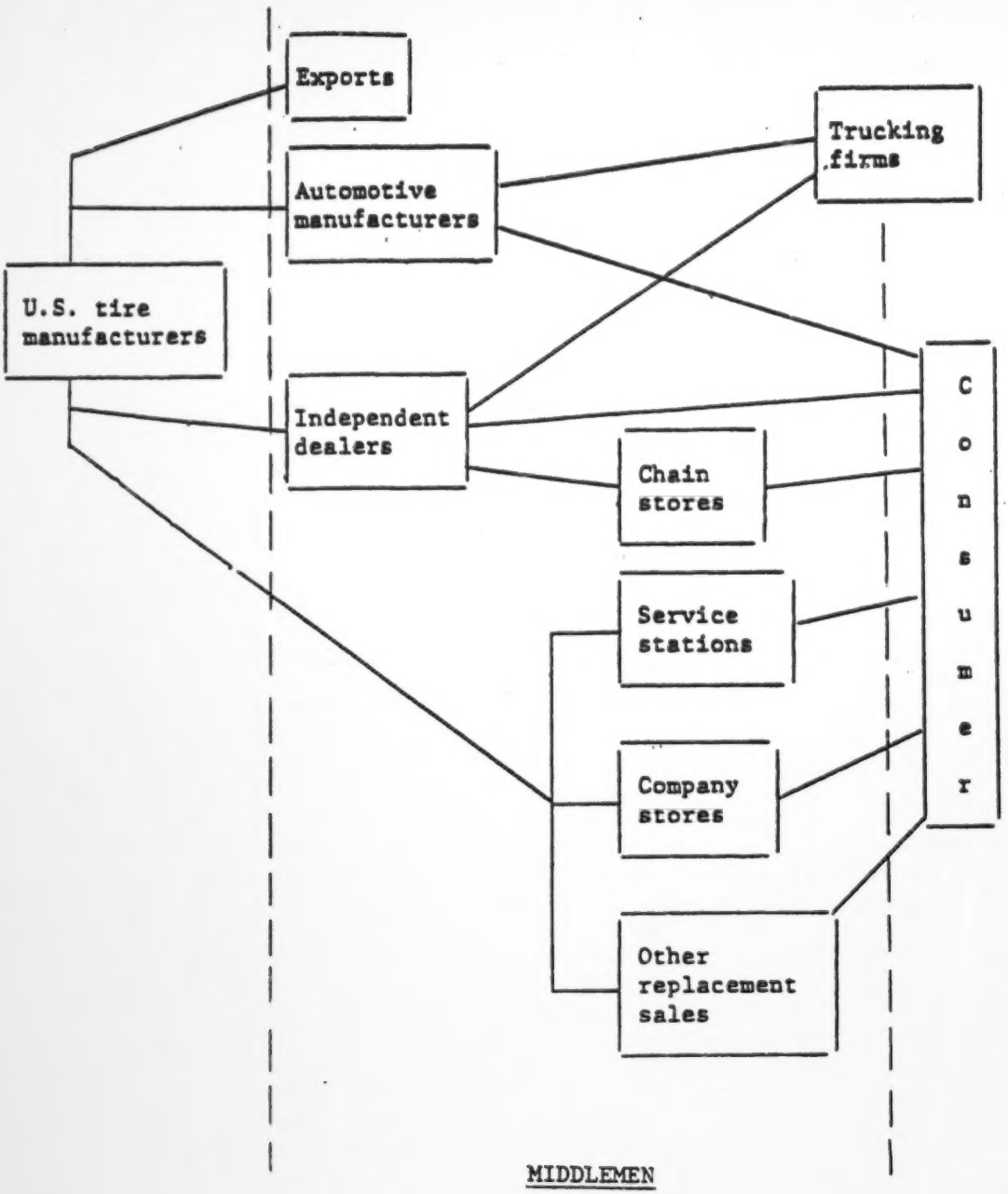
CHANNELS OF DISTRIBUTION - U.S. TIRE MARKET



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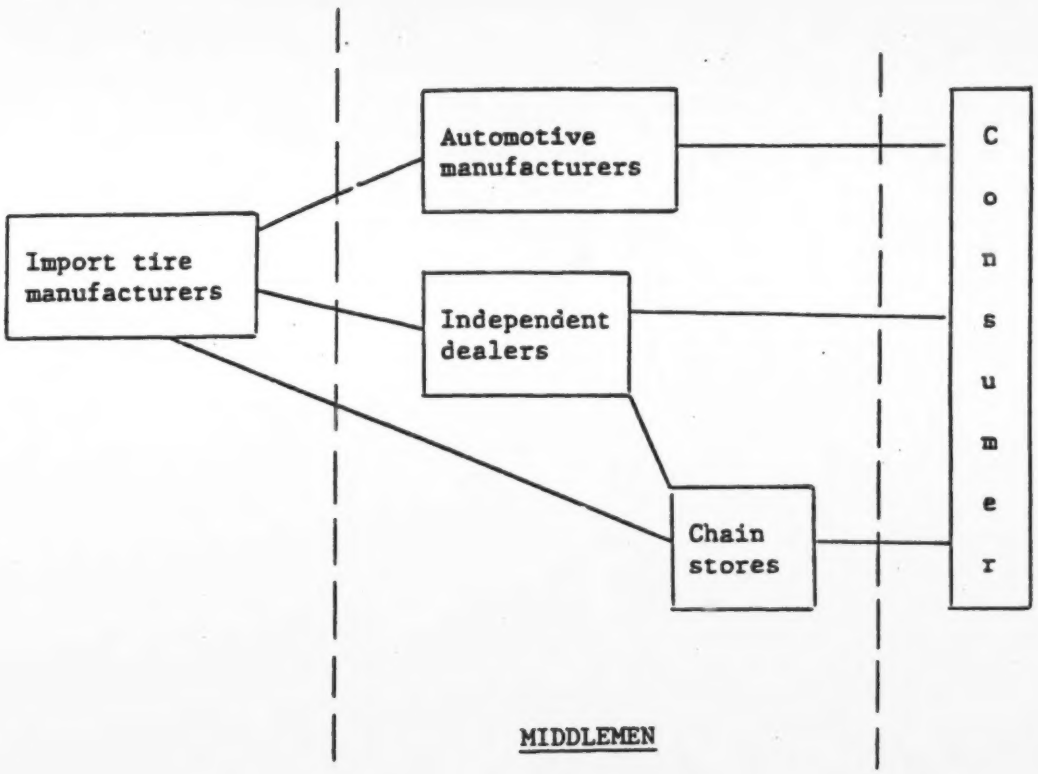
CHANNELS OF DISTRIBUTION - IMPORTED TIRE MARKET



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Independent dealers account for approximately 42 percent of the replacement tire market. These dealers buy directly from tire manufacturers and act as wholesalers, supplying other dealers and bulk consumers such as truck companies, or as retailers through their own retail outlets.

Service stations are the second largest source of supply for replacement tires, representing about 25 percent of the market. Although an individual service station may account for only a few dozen sales per year, the aggregate sales of several hundred thousand stations accumulate to account for a significant portion of the market. Service station sales may be handled through purchases of major company brands for resale to the service station outlet; the oil company may arrange to buy tires produced with a private label, made to order to the oil company's specifications; or the service station may act as a direct agent for the tire manufacturer, remitting a portion of his profit to the oil company represented.

Chain stores have maintained a substantial share of the replacement market for over half a century, accounting for about 20 percent of replacement sales. Tires for these outlets are manufactured to the chain stores' specifications under private brand names.

Company-owned stores are direct retail outlets for the major tire companies. These stores have accounted for about 10 percent of the market for the past several years. They generally handle only the tires of the manufacturer they represent and sell at competitive prices. At present, no foreign-owned tire manufacturers maintain company-owned retail stores. They generally manufacture private label tires or sell through chain stores and independent dealers.

U.S. Market

Domestic market profile

In 1979, approximately 73 percent of all passenger car tires purchased in the United States were sold as replacement tires. The remaining 27 percent of sales in the domestic market were accounted for by the purchase of new vehicles. 1/ However, the distribution of tires through the replacement market reflects the shifting of consumer preferences. The following tabulation shows the market shares of the various suppliers of replacement passenger car tires (in percent): 2/

1/ Includes domestic sales of imported tires.
2/ "1979 Tire Industry Facts," Modern Tire Dealer, Jan. 28, 1980, p. 30.

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Replacement tire market	1975	1976	1977	1978	1979
Independent dealers	56	57	57	60	61
Oil companies	15	9	8	6	5
Tire company stores	11	11	12	12	12
Department and discount stores 1/	3	24	24	22	22
Chain outlets 1/	17	-	-	-	-

1/ Department and discount stores and chain outlets were combined into one category in 1976.

It can be seen that the U.S. consumer is changing his tire-buying habits, looking more toward independent dealers. As previously mentioned, these dealers are often able to offer lower prices for equivalent quality tires, as they obtain their stock directly from the tire manufacturers. There has also been, concurrent with the drop in sales volume through oil company outlets, a significant drop in sales of "associated brands" 1/ of tires, as can be seen in the following tabulation (in percent): 2/

Category of tire brands	1975	1976	1977	1978	1979
Manufacturer brands	48	46	49	50	50
Private brands	33	35	35	1/ 36	34
Associated brands	14	12	10	10	9
Imports	5	7	7	6	7

1/ Total percentage is divided between 2 categories: 24.0 percent for department store brands, chain store brands, and oil companies, and 10 percent for distributor brands.

There has always been a great rivalry between domestic tire producers. The procedures used by the manufacturers and the materials which make up the final product are often highly protected industrial secrets. Although in the past there has never been the threat of import-related damage to the domestic

1/ Associated brands of tires are those produced by once-independent firms which are now owned by or associated with another manufacturer.
2/ "1979 Tire Industry Facts," op. cit., p. 30.

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industry, the competition from imports, particularly in terms of radial tires, has grown considerably. Radials were initially developed in Europe and have maintained at least a 50 percent share of the European tire market since the 1960's. In the early 1970's, the advanced radial technology of the European manufacturers provided the U.S. market with a choice between a radial tire which was a proven commodity and the new, unproven U.S. product. At that time, however, the U.S. market accepted neither. Not until 1974 did the U.S. public begin to demand radial tires, primarily as a means of increasing gasoline mileage.

At the present time, U.S. producers have achieved parity with foreign manufacturers in terms of quality and technology. Additionally, it is becoming harder to compare the imported products with the domestic products as the leading importers have either begun domestic production of their own or are planning to begin in the near future. In 1979, approximately 9 percent of the U.S. passenger car, truck, and bus tire markets was composed of imports, up from 7 percent the previous year.

Consumption

Tires.--The consumption pattern of the U.S. market has been changing during the past 5 years. Consumption figures for all tires and tubes are shown in table 1 appendix C; consumption figures for the passenger car tire sector are shown in table 2. Domestic consumption of passenger car tires peaked in 1977 at 201 million units. There had been steady growth during the several decades prior to 1977; growth in production had slowed in 1975 and 1976, though imports increased significantly in those years.

The effects of the gasoline crunch of the mid-1970's began to be observed in the consumption of tires in 1977. In 1978, consumption of passenger car tires dropped 4.5 percent in terms of quantity, from 201 million units in 1977 to 192 million units in 1978. The decline in consumption continued during the following year, falling to 178 million units. These decreases are thought by many industry analysts to be the beginning of a trend which may continue for another 5 to 10 years because of the better wear characteristics of new tires and decreases in overall driver miles. Although both consumption had dropped and the quantity of imports increased, the ratio of imports to consumption revealed that imports are still relatively insignificant in terms of the domestic market. The ratio increased irregularly, however, for passenger car tires, from 6.11 percent in 1975 to 8.50 percent in 1979, as shown in table 2.

Several of the important factors behind this turnaround in the consumption trend of tires include the change from bias-ply to radial construction and the increase in the price of gasoline. The recent increase in market preference for radials is illustrated in the following tabulation of market share by percentage of passenger car tires (in percent): 1/

1/ "Tire Industry Facts," op. cit., p. 26.

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Tire construction	1976	1977	1978	1979
Bias-ply	34.4	34.3	35.8	33.9
Bias-belted	29.6	28.7	22.0	19.8
Radial-ply	36.0	37.0	42.2	46.3

Industry sources feel that the price differential alone may be slowing the shift to radial tires. Currently the price for radial tires in retail sales outlets is approximately 36 percent greater than the price for bias-belted tires and 46 percent greater than that of bias-ply tires, as seen in the following tabulation of price data for passenger car tires: 1/

Tire construction	1976	1977	1978	1979
Bias-ply	$29.81	$32.50	$32.50	$37.57
Bias-belted	37.02	42.50	47.50	44.94
Radial-ply	58.48	62.50	62.50	69.87

Despite the price differential, consumers are becoming more aware of the long-term savings they will accrue from the switch to radial tires. The initial extra cost is quickly offset by the increased gasoline mileage and the resulting savings. The increased lifetime of the tire allows the motorist to keep a set of tires for a considerably longer period than previously possible with bias-ply or bias-belted tires. The extended lifetimes of radials may reach 200 to 300 percent of the lifetime of bias-ply tires.

Additionally, the U.S. automotive market has been hurt by the gasoline shortages. With a significant decrease in the number of vehicles being produced, there has been a corresponding decrease in the demand for tires purchased by the automotive manufacturers. The number of OE tires supplied has been fluctuating as seen in the following tabulation (in millions): 1/

1/ "1979 Tire Industry Facts," op. cit., p. 24.

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Year	Number OE passenger units	Number OE truck and bus units
1975	40	8.3
1976	50	9.2
1977	58	11.2
1978	57	12.0
1979	51	10.2

The gasoline shortages have also caused a decrease in the sales volume of replacement tires. As gasoline became difficult to obtain during certain periods, as well as increasingly more expensive, the typical U.S. driver cut back considerably on his driving, thus prolonging the lifetime of his present tires.

Since tire producers are concerned about the downswing, they have sought to preserve their own respective shares of the market. The largest producers still are supplying the entire market with almost every type and size of tire demanded by the consumer. The majority of independent tire companies now are seeking to cater to one or more specialty niches. For example, certain producers may produce tires only for use on industrial vehicles or heavy machinery, limiting their range of products, but instead concentrating on producing a better product. In this manner, all 14 of the tire companies producing tires domestically in 1979 hope to survive the next 5 years of predicted downturn in the tire market.

Tubes.--The U.S. market for inner tubes is determined in a significant way by the market for the tires which require tubes. Analyzing the tire markets individually, there is virtually no demand for tires requiring tubes in the conventional passenger car tire OE market. The demand for tubed tires persists in the OE markets of 4-wheel drive vehicles, trucks, buses, and heavier industrial and agricultural tires.

The replacement market for inner tubes may be greater in size than the replacement market for the corresponding tires owing to the multiple retreading 1/ of the tires for trucks, buses, and larger vehicles. Domestic apparent consumption of inner tubes has been maintaining a fairly steady

1/ Retreading involves the replacement of new tread material over a tire casing where the tread has been worn off. Retreading may be done on the same tire casing as many as three times, provided the casing remains in good condition.

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annual growth rate of approximately 10 percent as shown in table 3. Industry officials do not expect this growth to continue, but conversely do not expect to see any major decreases in market strength. The increased preference of the U.S. consumer for radials has not only caused a decrease in the consumption of tires, but also stimulated market sales of tubes. This is because of increased strain placed upon tubes when used in radial tires as opposed to bias-belted or bias-ply tires. This has, therefore, led to the development of a stronger tube designed for use in radials, which may also be used with any other tire.

The apparent consumption of inner tubes increased 46 percent between 1975 and 1979, from 59 million inner tubes in 1975 to 86 million in 1979. Imported tubes have always made a significant contribution to domestic consumption, as shown in table 3. The imports to consumption ratio has remained between 45 and 49 percent since 1976.

U.S. production

Tires.--The pattern of production of tires in the United States has altered drastically during the past 5 years. Although there had been steady growth through the 1977 production year, the advent of longer lasting tires and gasoline price rises greatly reduced domestic tire manufacturers' growth plans for the late 1970's and early 1980's. As late as mid-1976, industry leaders expected production growth to continue, forecasting auto tire production to reach 217 million units in 1980. However, 14 tire plants 1/ have been forced to close down since January 1, 1979, as industry predictions of production growth in 1979 were disrupted beginning with the curtailment of oil shipments from Iran, followed by ensuing gasoline shortages. These shortages, as well as lines at service stations and precipitous price increases, forced many drivers to give up their vehicles and opt for mass transit systems. As a result, the demand for replacement tires decreased; demand for OE tires also declined as the automotive industry went into a slump. Including both the OE market and the replacement market, shipments of passenger car tires dropped approximately 12 million units below expectations in 1979. Estimated production figures for passenger car tires, as shown in table 2, range from a low of 158 million in 1975 to a peak of 193 million in 1977. Production has been estimated to have declined to 168 million in 1979. The estimated number of shipments, including interplant transfers, from 1975 to 1979 in several of the major tire markets are as follows (in millions): 2/

1/ Six plants were closed in 1979; 8 plants were closed in 1980.
2/ "Tire Industry Facts," op. cit., p. 24.

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Item	1975	1976	1977	1978	1979
Passenger tires:					
OE	40	50	58	56.5	51
Replacement	129	137	139	147.0	135
Truck tires:					
OE	8.3	9.2	11.2	12	10.2
Replacement	21.4	23.4	28.5	32	31.8

Estimated total tire production declined by more than 17 percent between 1977 and 1979, from 246 million units in 1977 to 202 million units in 1979. The following tabulation shows the estimated production of tires within the United States: 1/

Year	Tire production (millions)
1975	197
1976	206
1977	246
1978	222
1979	202

Another result of the downturn of the industry is the decreasing operating rates of the domestic tire manufacturers. These rates had been increasing steadily since the end of the strike against the major producers in 1976. Between September 1978 and March 1979 the operating rates remained fairly close to 100 percent. Since April 1979, the rates have been falling irreguarly, declining to a level of approximately 70 percent by January 1980.

Despite this fairly dismal picture, U.S. tire producers are fighting the trend and attempting to maneuver into profitable situations. The leveling of gasoline prices in mid-1980 and the introduction of more fuel-efficient vehicles were beginning to increase driver miles again in the latter half of 1980. These two factors were expected to modestly increase tire sales. However, recent developments, such as the Iran-Iraq war and the total decontrol of domestic oil prices, will tend to counterbalance these advances. To what degree, however, there are as yet no official estimates.

At the same time, the producers are seeking their own mechanisms to salvage the industry. Some analysts predict that as many as 6 or 7 of the

1/ Data derived from tables 1 and 3.

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remaining 14 producers will no longer be involved with tire production by 1985. A few U.S. producers are now diversifying into businesses totally unrelated to tires while others have specialized. One producer, which now chooses to consider itself out of competition with the "majors," admits to a new approach to the tire business. They are now involved only in the production of the less competitive, more profitable items in each of its lines. Examples include all-terrain light truck tires and rear radial tires for farm tractors.

Between January 1979 and January 1980, three companies dropped production of passenger car tires and a number of plants halted production. Although the majority of plant closings involved production of bias-belted tires, not enough excess capacity was removed from the production potential to alleviate the industry's problems.

Tubes.--U.S. production of tubes, mostly for truck, bus, agricultural, and heavy machinery tires, has been increasing in quantity (table 3) since 1976. Between 1976 and 1979 there was approximately a 30-percent increase in production, from 37 million units in 1976 to 48 million units in 1979. There had been a 17 percent decline in production between 1975 and 1976, from 45 million units to 37 million units. This sharp decrease may be best understood in terms of the strike against major producers in 1976 and the decision by most dealers to sell out their inventories of older inner tubes in order to make room for shipments of newly designed radial tire tubes.

U.S. imports

U.S. imports of tires and tubes increased significantly between 1975 and 1979, from 64 million units to 128 million units (table 4). However, when the gross category of tires and tubes is broken down into components, such as passenger car tires or bicycle tires, certain component markets absorb the majority of the imports.

Tires.--The majority of imported passenger car tires between 1975 and 1979 were radial in construction. 1/ The two largest import sources of passenger car tires are Canada and France. Other major source countries include West Germany, Italy, Spain, and Japan. Detailed import statistics on passenger car tires may be found in table 5. In 1979, Canada's export volume of 3.6 million units accounted for more than 24 percent of all U.S. imports. In that year, imports from France of 3.0 million units accounted for more than 20 percent of U.S. imports. Imports from EC countries (not including Spain) in 1979 amounted to approximately 6.4 million units, valued at more than $171 million. The share of the import market supplied by the EC was more than 42 percent in 1979.

1/ Industry sources estimate that at least 70 percent of all imported passenger car tires are radials.

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During the 5-year period from 1975 through 1979, the EC share of the import market varied from a high of 48 percent in 1975 to a low of 39 percent in 1978. The major cause for the variation in this statistic has been the increase in quantity of shipments from France and Canada.

The quantity and value of imported passenger car tires from Canada have increased at a greater rate than those of any other country. While the quantity of imports of all passenger car tires increased by 52 percent, the quantity of imports from Canada increased by approximately 163 percent; value of total Canadian imports increased from $57 million in 1975 to more than $149 million in 1979, or by approximately 161 percent. The unit value of imports from Canada have remained fairly stable, changing only from $41.19 in 1975 to $40.90 in 1979. Canada's increase in export volume to the United States is primarily because of an increase in production capacity particularly of passenger car tires.

The overall trend, however, has been increased unit values as the type of imported tire changes to radial-type construction. Between 1975 and 1979, unit value of imported passenger car tires increased by approximately 21 percent, from $28.91 in 1975 to $34.91 in 1979. In 1975, imports from France, West Germany, Italy, and Spain ranged in unit value from $34.02 to $36.91, while imports from Japan were far less expensive, averaging $25.46 per unit. Data for January-September 1980 indicate that West German-produced tires became the highest valued, at $42.74. The other European and Canadian imports had unit values varying between $36.13 and $40.72; imports from Japan remained at a unit value of $26.19.

U.S. imports of truck and bus tires increased steadily between 1975 and 1979, as can be seen in table 6. The largest annual increase occurred between 1975 and 1976, when the volume of imports increased by more than 111 percent, and the value by more than 102 percent. This jump in imports was accounted for mainly by three countries: Japan, which increased its volume of U.S. imports by 161 percent, from a quantity of 290,000 units in 1975 to 757,000 units in 1976, increased its import market share from 17 to 21 percent and became the largest importer by volume for that year; the United Kingdom increased its volume of U.S. imports by 241 percent, from a quantity of 102,000 units in 1975 to 347,000 units in 1976; Korea increased its quantity of imports by 411 percent, from a quantity of 38,000 units in 1975 to 192,000 units in 1976. By 1979, Korea had become the third largest import source for truck and bus tires, behind Japan and France. A similar pattern emerged again in data for January-September 1980.

In 1979, Japan was the number one importer of truck and bus tires in terms of quantity. Imports from Japan numbered 1.4 million units, accumulating a 29-percent share of the import market. France, the second largest foreign supplier of truck and bus tires in 1979 with 1.2 million units, was first in value of shipments. Imports from France were valued at $152 million, accumulating a 25 percent import market share in terms of value. Imports from

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Japan were valued at $130 million in 1979, accounting for slightly less than 22 percent of the market.

Imports from Korea accounted for 11 percent of U.S. imports by volume, but only 6 percent of imports in terms of value. The unit value of Korean truck and bus tires, $70.10, was lower than the corresponding unit value of imports from any other country of record. It is noted that the tires originating in West Germany, Italy, and the United Kingdom have higher unit values primarily owing to the sizes and material compositions of the tires produced in these countries.

The only other class of tire of any import significance is the bicycle tire. Imports of bicycle tires are detailed both in terms of quantity and value in table 7. It should be noted that the majority of U.S. imports of bicycle tires, as well as bicycle tubes, are duty free under the GSP, as can be seen in table 8.

After the large increase in imports from Taiwan in 1976 and from the Republic of Korea in 1976 and 1977, import levels stabilized. In terms of quantity, U.S. imports of bicycle tires increased by 77 percent between 1975 and 1976, by 14 percent the following year, and actually declined by 3 percent in 1978. In 1979 there again was growth, from 19 million units in 1978 to 23 million units in 1979, representing an increase of 18 percent. The overall increase between 1977 and 1979 was only 10 percent.

Tubes.--The majority share of U.S. imports of tubes (table 9) is composed of bicycle tire tubes. The following tabulation lists imports of inner tubes in several categories between 1976-79, and January-September 1980:

Category	1976	1977	1978	1979	Jan.-Sept. 1980
	Quantity (1,000 units)				
Bicycle tubes under GSP	23,747	27,285	27,954	32,741	29,376
All bicycle tubes	26,145	29,141	29,193	33,321	30,381
All inner tubes	31,916	34,907	37,134	41,185	36,512
	Value (1,000 dollars)				
Bicycle tubes under GSP	10,516	12,321	12,895	17,791	20,458
All bicycle tubes	11,864	13,571	13,749	18,326	21,945
All inner tubes	34,786	34,712	44,946	57,489	53,550

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In 1976 and 1977, bicycle tire tubes had a much greater share of the import market than in 1978-80. Although in 1979 they still made up close to 81 percent of the imports in terms of quantity, the larger size tubes of greater unit value comprised approximately a 69-percent share of the imports of all tubes in terms of value. The comparative unit values of imported inner tubes were as shown in the following tabulation:

Period	Unit value	
	Bicycle tubes	Other inner tubes
1976	$0.45	$3.88
1977	.47	3.67
1978	.47	3.93
1979	.55	4.98
Jan.-Sept. 1980	.72	5.15

The major supplying countries for inner tubes are Taiwan and the Republic of Korea. Italy and Japan also supply the U.S. market with a significant number of inner tubes, although considerably less than the quantity from Taiwan and Korea. The unit values (table 9) vary considerably; it is clear from these statistics that tubes imported from Italy, with a unit value of $11.71 in 1979, and from Japan, with a unit value of $4.49 in 1979, are designed for use with tires at least as large as passenger car tires. In 1979, approximately 90 percent of Taiwanese and Korean imports of tubes were designed for bicycle tires. In terms of quantity, Taiwan, supplying 23.2 million tubes in 1979, and Korea, supplying 13.0 million tubes in 1979, accounted for approximately 88 percent of all imports. The two largest importers in terms of value are Taiwan, with imports valued at $14.4 million in 1979, and Italy, with imports valued at $10.7 million in 1979. Together they accounted for 26 percent of all imports of inner tubes in terms of value.

Imports under the Generalized System of Preferences.--Imports of passenger car tires under the GSP have been relatively insignificant in relation to U.S. consumption. Using data compiled for calendar year 1979, approximately 83 percent of passenger car tire imports originated in one of 26 developed countries. Of the remaining 17 percent, less than 8 percent of the total imports were eligible for GSP treatment. As a percentage of domestic apparent consumption, 0.65 percent or 1.2 million units, valued at $23.3 million entered the United States free of duty. Of the GSP imports, approximately 36 percent originated in Brazil, 21 percent in Korea, and 17 percent in Israel. Other GSP nations marketing passenger car tires domestically include Mexico, Yugoslavia, Taiwan, India, and Chile.

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There have been no significant imports of truck and bus tires under the GSP. As previously noted, the majority of U.S. imports of bicycle tires and bicyle tire tubes enter under the GSP. In 1979, more than 92 percent in terms of quantity, and 95 percent in terms of value of all bicycle tire imports were under the GSP (tables 8 and 10). The number of GSP imports of bicycle tires increased irregularly between 1976 and 1979, from 15.2 million units to 21.3 million units. The largest suppliers of bicycle tires to the United States under the GSP are Taiwan and the Republic of Korea. Together these two nations accounted for 21.0 million units imported into the United States in 1979, which represented 98.3 percent of all GSP imports of bicycle tires.

GSP imports of tubes for bicycle tires increased from 23.7 million units in 1976 to 32.7 million units in 1979. GSP imports of these tubes for 1979 represented 98.3 percent of all bicycle tire tube imports. The two major suppliers of these imports since 1975 have been Taiwan and the Republic of Korea; together they made up 98.8 percent of all GSP imports in 1979. Data for January-September 1980 indicates that the trend is continuing.

International Market

World market profile

The United States has always led all other nations in production of tires. The following tabulation illustrates the changes in recent years of tire production capacity (in million units):

Year	Estimated tire production capacity				
	United States	Canada	Western Europe	Asia	World
1962	153.0	11.1	83.8	17.5	294.7
1967	190.6	18.1	128.6	38.8	463.9
1972	257.3	23.4	208.9	79.1	652.5
1973	258.3	24.2	231.1	88.8	703.0
1974	261.4	24.4	232.9	91.3	743.3
1975	266.7	25.8	239.2	93.3	769.0
1976	260.1	24.5	256.2	104.7	801.1
1977	260.5	25.1	257.2	103.7	810.2
1978	261.6	26.1	254.7	109.4	823.9

It should be noted that the production slump of the 1970's was felt not only in the United States, but also in most other industrialized nations. The production growth rates for tires for successive 5-year periods are listed in the following tabulation (in percent):

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5-year period	Production growth rates				
	United States	Canada	Western Europe	Asia	World
1962-67	24.6	63.1	53.5	121.7	57.4
1967-72	35.0	29.3	62.4	103.9	40.7
1972-77	1.2	7.3	23.1	31.1	24.2

Production growth rates throughout the world market are slowing, while in the Western industrialized nations growth has essentially halted. Tire production by large multinational firms has reached plateaus in terms of the production within the home country. However, these same multinationals, 11 of which remain viable, are now investing in production facilities in foreign countries. Although actual statistics are not available, it is estimated that up to 30 percent of world tire and tube sales of firms based in the United States may be from U.S.-based foreign affiliates, especially those located in Canada. It is difficult to ascertain the growth of production of foreign investments within national statistics, as the increase in shares of the foreign affiliates has not reflected overall growth, but instead has been at the expense of smaller, privately-owned firms. At present, there are five U.S.-based producers with significant production abroad. In addition, two foreign-owned firms are currently operating tire production facilities within the United States, with the prospect of more foreign investment a much discussed possibility. Throughout the past two decades, the U.S. share of world tire production has been declining as follows (in percent):

Year	U.S. production/ world production	U.S. production/ Western European production
1962	51.9	182.6
1967	41.1	148.2
1972	34.9	123.2
1975	34.7	111.5
1976	32.5	101.5
1977	32.2	101.3
1978	31.8	102.7

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One possible reason for the decrease in share of world production in the United States was the advent of the radial tire in the 1970's. As manufacturers in Western Europe, in France, and in other countries as well, had been supplying their own radial passenger car tire needs and had garnered much needed experience, the newly developed U.S. radial technology was far behind. The quality of the U.S. product for a great many years was technologically inferior to the foreign product, causing a cutback in sales of the U.S. product, and even leading automotive manufacturers to purchase foreign-produced radials for their more expensive and luxurious models. Within the past 3 years, however, U.S. firms have achieved parity with foreign technology. However, some foreign technology is now employed in the production of tires in the United States. A U.S.-based firm also introduced a new tire cord material, aramid, which significantly improved certain tire qualities. It is hoped by the domestic industry that the United States' share of world production will stabilize through advances in technology.

U.S. exports

U.S. exports of all tires and tubes (table 11) are relatively insignificant when compared with domestic production. As can be seen in table 12, exports increased significantly for the category of truck and bus tires, increasing 122 percent in terms of quantity and 61 percent in terms of value between 1978 and 1979. Exports of bicycle tires (table 13) have also increased significantly. Partial data for truck and bus tires for 1980, including only January through September exports, indicate a substantial increase, when compared with the corresponding period in 1979; exports in 1980 increased by 174 percent in terms of quantity and 122 percent in terms of value. Total exports of truck and bus tires for 1980 should approach a quantity of 4 million units.

One unusual aspect of the truck and bus tire export market is the great increase in quantity of low-priced exports to Canada. The average unit value dropped from $65.63 for Canadian-targeted exports in 1978 to a low of $7.10 for January-September 1980. The quantity of these exports is estimated to have increased by almost 1500 percent between 1978 and 1980. However, the validity of this preliminary statistic is currently being questioned.

Exports of bicycle tires, which make up approximately 0.14 percent of all tire and tube exports, have also increased significantly (table 13). Between 1978 and 1979, exports increased from 8,876 units to 19,638 units, representing an increase of 121 percent. In terms of value, the export volume increased by 246 percent, from $61,000 to $211,000. As the unit value of exports increased, from an average of $6.86 in 1978 to an average of $15.10 for January-September 1980, the total value of exports also increased greatly. For the period January-September 1980, the total value of bicycle tire exports increased approximately threefold when compared with the corresponding period of 1979. The total value increased from $104,000 in the 9-month period of 1979 to $310,000 during the corresponding period of 1980. The major contributing

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force behind this increase was the expansion of the market for expensive tires into Saudi Arabia; exports to Saudi Arabia increased in quantity from zero in 1978 to 220 units in 1979, and 6,496 units for January-September 1980. The other major new export market for bicycle tires is Australia; exports grew from zero in 1978 to approximately 4,000 units in 1979. For January-September 1980, Canada, Australia, and Saudi Arabia absorbed 67 percent of U.S. exports of bicycle tires.

The most important export market sector is that of passenger car tires (table 14), which made up 26 percent of all tire and tube exports in 1979. However, the quantity of these exports has followed the pattern of U.S. passenger car tire production, increasing significantly only between 1976 and 1977, as seen in the following tabulation:

Year	Exports	Production	Exports as a share of production
	1,000 units		Percent
1975	5,340	158,100	3.38
1976	4,190	156,900	2.67
1977	5,289	193,400	2.73
1978	4,577	183,200	2.50
1979	4,848	168,000	2.89

Generally, exports as a share of U.S. production for all tires and tubes averages slightly higher than the same statistic for passenger car tires. The overall production share of exports increased from 5.9 percent in 1975 to 7.6 percent in 1979.

Canada provided the major market for all tire and tube exports for each year between 1975 and 1980. Mexico and Venezuela also have had growing shares of the U.S. export market throughout the 6-year period, as seen in the following tabulation (in percent):

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Period	Market share by quantity			
	Canada	Mexico	Venezuela	Total
1975	57.6	2.5	3.2	63.3
1976	51.3	1.2	8.6	61.1
1977	53.0	0.7	12.4	66.1
1978	44.9	2.5	9.1	56.4
1979	34.4	6.9	6.1	47.4
January-September 1980	29.1	11.4	15.7	56.2

Except for 1979, when the United Kingdom accounted for a 7 percent share of U.S. tire and tube exports, Canada, Mexico, and Venezuela absorbed more than 50 percent of all U.S. exports of tires and tubes.

U.S. exports of tubes (table 14) declined from approximately 4.0 million units in 1975 to 2.3 million units in 1977. Stemming this decline in 1978 and 1979, and increasing the volume of exports to 3.6 million units in 1979, were growing export markets in Mexico and Venezuela. Data for January-September 1980 show these two nations together accounting for 42 percent of U.S. exports of tubes. The next largest market for U.S. exports of tubes in 1980, Canada, had previously been the largest importer of U.S.-made tubes between 1975 and 1979; Canada's export market share declined from 33 percent in 1975 to 19 percent in 1979.

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Appendix A

Part 12, subpart C, of schedule 7 of the Tariff Schedules of the United States Annotated (1981)

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CSP	Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty 1	LDDC	2
			Tires, and tubes for tires, of rubber or plastics:				
			Pneumatic tires:				
A	772.43	00	Airplane	No.	3.8% ad val.	Free	30% ad val.
	772.46	00	If certified for use in civil aircraft (see headnote 3, part 6C, schedule 6)	No.	Free		30% ad val.
	772.49	00	Bicycle	No.	5% ad val.		10% ad val.
	772.50	00	Designed for tractors provided for in item 692.34 or for agricultural or horticultural machinery or implements provided for in item 666.00	No.	Free		Free
A*	772.51		Other		4% ad val.		10% ad val.
		05	New (not including recapped): Passenger car tires	No.			
		15	Truck and bus tires	No.			
		25	Motorcycle tires	No.			
			Other:				
		35	Not over 24 inches rim size	No.			
		45	Over 24 inches rim size	No.			
		55	Other	No.			
A	772.54	00	Tires, other than pneumatic tires	No.	3.8% ad val.	Free	23% ad val.
			Tubes:				
	772.57	00	Bicycle	No.	15% ad val.		30% ad val.
	772.58	00	Designed for tires provided for in item 772.54	No.	Free		Free
A	772.60	00	Other	No.	4.7% ad val.	3.7% ad val.	23% ad val.
A	772.63*		Hose, pipe, and tubing, all the foregoing not specially provided for, of rubber or plastics, suitable for conducting gases or liquids, with or without attached fittings		9.8% ad val.	3.1% ad val.	23% ad val.
			Rigid:				
		10	Of polyvinyl chloride	Lb.			
		20	Of polyethylene	Lb.			
		30	Other	Lb.			
			Non-rigid:				
			Reinforced:				
		40	With metal	Lb.			
			Other:				
		50	Of polyvinyl chloride	Lb.			
		60	Other	Lb.			
			Non-reinforced:				
		70	Of polyvinyl chloride	Lb.			
		80	Of polyethylene	Lb.			
		90	Other	Lb.			
	772.66	00	If Canadian article and original motor-vehicle equipment (see headnote 2, part 6B, schedule 6)	X	Free		
	772.67	30	Hose, pipe, and tubing: all the foregoing with attached fittings, if certified for use in civil aircraft (see headnote 3, part 6C, schedule 6)	Lb.	Free		23% ad val.

1/ Articles exported to the United States prior to July 1, 1980, must be appraised under the valuation standards provided for in sections 402 and 402a of the Tariff Act of 1930 in effect on June 30, 1980.

Note: For explanation of the symbol "A" or "A*" in the column entitled "CSP", see general headnote 3(a).

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Appendix B

Concordance of TSUS numbers, Schedule B numbers, SIC numbers, SITC numbers, and CCCN numbers

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Tires and tubes: TSUS item numbers, schedule B numbers, SIC numbers, SITC numbers, and CCCN (BTN) numbers included in this commodity group

TSUS Item No.	Schedule B. No.	SIC No.	SITC No.	CCCN (BTN) No.
772.45	772.4500 (pt.)	3011 (pt.)	629.1 (pt.)	40.11 (pt.)
772.46	772.4500 (pt.)	3011 (pt.)	629.1 (pt.)	40.11 (pt.)
772.48	772.4800	3011 (pt.)	629.1 (pt.)	40.11 (pt.)
772.50	772.5000	3011 (pt.)	629.1 (pt.)	40.11 (pt.)
772.51	772.5105	3011 (pt.)	629.1 (pt.)	40.11 (pt.)
	772.5115			
	772.5125			
	772.5150			
	772.5160			
772.54	772.5400	3011 (pt.)	629.1 (pt.)	40.11 (pt.)
772.57	772.5700	3011 (pt.)	629.1 (pt.)	40.11 (pt.)
772.59	772.5900	3011 (pt.)	629.1 (pt.)	40.11 (pt.)
772.60	776.600	3011 (pt.)	629.1 (pt.)	40.11 (pt.)

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Appendix C

Statistical Tables

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Table 1.--Tires and tubes: U.S. production, exports, imports, and apparent consumption, 1975-79

Year	Production 1/	Exports	Imports	Apparent consumption	Ratio of imports to consumption
	1,000 units				Percent
1975	242,000	14,231	64,014	261,693	24.46
1976	243,000	10,825	92,813	324,988	28.56
1977	285,000	11,916	108,690	381,774	28.47
1978	269,000	17,009	103,159	355,150	29.05
1979	250,000	18,918	127,745	358,827	35.60

1/ Estimated from data published by Rubber Manufacturers Association (RMA); member firms only. RMA members represent approximately 90 percent of the domestic industry.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 2.--Passenger car tires: U.S. production, exports, imports, and apparent consumption, 1975-79

Year	Production 1/	Exports 2/	Imports	Apparent consumption	Ratio of imports to consumption
	1,000 units				Percent
1975	158,100	5,340	9,940	162,700	6.11
1976	156,900	4,190	12,643	165,353	7.65
1977	193,400	5,289	13,077	201,188	6.50
1978	183,200	4,577	12,925	191,548	6.75
1979	168,000	4,848	15,161	178,313	8.50

1/ Estimated from data published by RMA.
2/ Data for 1975-77 includes motorcycle tires.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

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Table 3.--Tubes: U.S. production, exports, imports, and apparent consumption, 1975-79

Year	Production 1/	Exports	Imports	Apparent consumption	Ratio of imports to consumption
	1,000 units				Percent
1975	45,000	3,998	17,515	58,517	29.93
1976	37,000	3,167	31,916	65,749	48.54
1977	39,000	2,298	34,967	71,669	48.79
1978	47,000	3,015	37,134	81,119	45.78
1979	48,000	3,576	41,185	85,609	48.11

1/ Estimated from industry data.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

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Table 4.--Tires and tubes: U.S. imports for consumption, by principal sources, 1975-79 and January-September 1979, and January-September 1980

Source	1975	1976	1977	1978	1979	January-September-- 1979	1980
	Quantity (1,000 units)						
France	3,108	3,204	4,957	4,225	4,929	3,678	3,715
Canada	20,861	25,228	29,539	24,364	33,048	25,328	20,738
Japan	6,233	8,074	9,573	9,051	14,394	11,368	10,520
FR Germ	1,791	1,629	1,716	1,837	2,523	1,801	1,446
Italy	2,861	3,260	2,763	2,457	2,814	2,251	1,591
Spain	1,674	1,319	1,552	1,191	1,704	1,290	637
All other	27,487	50,100	58,589	60,033	68,332	49,816	58,510
Total	64,014	92,813	108,690	103,159	127,745	95,531	97,159
	Value (1,000 dollars)						
France	106,656	140,379	180,775	213,124	291,563	224,141	210,273
Canada	97,081	255,442	167,780	204,012	249,828	173,243	132,407
Japan	58,415	116,701	170,069	204,680	223,693	167,418	196,379
FR Germ	69,715	70,416	81,391	83,565	133,730	98,275	86,741
Italy	73,847	80,170	79,236	79,704	114,233	92,466	60,495
Spain	65,483	56,170	73,888	69,835	92,447	71,671	50,092
All other	25,188	169,978	209,196	200,976	267,402	196,674	232,021
Total	566,384	869,256	962,335	1,055,896	1,372,896	1,023,888	968,407
	Unit value						
France	$34.32	$43.82	$36.47	$50.44	$59.15	$60.94	$56.60
Canada	4.65	10.13	5.68	8.37	7.56	6.84	6.38
Japan	9.37	14.45	17.76	22.61	15.54	14.73	18.67
FR Germ	38.94	43.23	47.43	45.48	53.00	54.57	59.98
Italy	25.81	24.59	28.67	32.44	40.59	41.09	38.02
Spain	39.13	42.58	47.60	58.64	54.27	55.56	78.58
All other	3.46	3.39	3.57	3.35	3.91	3.95	3.97
Average	8.85	9.58	8.85	10.24	10.75	10.72	9.97

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 5.--Passenger car tires, new: U.S. imports for consumption, by principal sources, 1975-79 and January-September 1979, and January-September 1980

Source	1975	1976	1977	1978	1979	January-September-- 1979	1980
	Quantity (units)						
Canada	1,385,841	3,347,320	1,938,026	3,144,861	3,644,520	2,644,087	1,669,903
France	1,843,585	2,075,212	3,647,859	2,674,119	3,037,335	2,243,551	2,079,644
FR Germ	1,562,024	1,269,910	1,260,288	1,301,285	1,757,561	1,299,338	984,632
Italy	1,368,264	1,686,203	1,284,696	1,113,489	1,595,453	1,240,049	899,002
Spain	1,518,689	1,286,170	1,507,181	1,072,695	1,467,472	1,122,301	415,509
Japan	402,844	805,199	1,249,988	1,069,747	1,156,942	846,832	1,317,225
All other	1,859,127	2,172,514	2,189,153	2,568,985	2,501,668	1,892,431	2,176,243
Total	9,940,374	12,642,528	13,077,191	12,925,181	15,160,941	11,288,589	9,542,858
	Value (1,000 dollars)						
Canada	57,086	128,521	77,240	117,327	149,047	101,809	67,994
France	50,844	63,846	83,249	82,147	111,800	82,591	79,840
FR Germ	46,816	40,462	44,338	41,687	64,849	47,685	42,030
Italy	39,171	48,303	40,351	34,365	54,272	41,234	32,481
Spain	44,341	41,061	55,836	38,384	51,542	40,222	15,501
Japan	8,730	18,331	30,154	28,278	29,456	21,388	34,495
All other	40,412	48,527	57,327	62,092	68,274	50,085	61,284
Total	287,400	389,051	388,489	404,280	529,261	385,014	333,676
	Unit value						
Canada	$41.19	$38.40	$39.85	$37.31	$40.90	$38.50	$40.72
France	27.58	30.77	22.82	30.72	36.81	36.81	38.39
FR Germ	29.97	31.86	35.18	32.04	36.91	36.70	42.74
Italy	28.63	28.65	31.41	30.86	34.02	33.25	36.13
Spain	29.20	31.92	37.05	35.78	35.12	35.84	37.31
Japan	21.67	22.77	24.12	26.43	25.46	25.26	26.19
All other	21.74	22.34	26.18	24.34	27.29	26.47	28.15
Average	28.91	30.77	29.71	31.27	34.91	34.11	34.97

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 6.--Truck and bus tires, new: U.S. imports for consumption, by principal sources, 1975-79 and January-September 1979, and January-September 1980

Source	1975	1976	1977	1978	1979	January-September-- 1979	1980
	Quantity (units)						
France	547,710	686,859	860,544	1,089,962	1,182,990	966,412	709,124
Japan	289,675	756,547	1,086,423	1,324,494	1,383,724	1,000,203	949,376
FR Germ	149,735	180,381	196,422	183,492	322,481	248,526	178,928
Italy	192,331	174,238	218,013	199,722	231,496	200,355	98,129
U. K	101,957	347,214	275,676	181,894	232,809	177,235	130,236
Kor Rep	37,561	191,868	441,812	413,504	303,582	365,273	515,892
All other	366,809	1,224,590	985,027	866,284	915,130	695,856	597,124
Total	1,685,868	3,561,697	4,063,917	4,259,352	4,772,212	3,653,860	3,178,809
	Value (1,000 dollars)						
France	$46,554	$66,585	$95,781	$120,293	$152,251	$121,287	$109,640
Japan	25,883	69,268	102,988	124,439	129,670	97,254	112,374
FR Germ	16,393	21,570	32,306	36,790	61,537	46,111	39,019
Italy	22,914	20,031	29,405	34,166	47,948	41,528	20,308
U. K	11,465	40,152	39,409	29,492	46,928	33,314	32,091
Kor Rep	3,120	14,225	31,046	26,003	36,241	25,604	39,361
All other	47,619	119,754	116,245	107,750	122,821	92,273	82,995
Total	173,948	351,582	447,180	478,933	597,396	457,371	435,788
	Unit value						
France	$84.99	$96.94	$111.30	$110.36	$128.70	$125.50	$154.61
Japan	89.35	91.56	94.80	93.95	93.71	97.23	118.36
FR Germ	109.48	119.58	164.47	200.50	198.82	185.54	218.07
Italy	119.14	114.96	134.88	171.07	207.12	207.27	206.95
U. K	112.45	115.64	142.95	162.14	201.57	187.97	246.41
Kor Rep	83.06	74.14	70.27	62.88	71.97	70.10	76.30
All other	129.79	97.79	118.01	124.38	134.21	132.60	138.99
Average	103.18	98.71	110.04	112.44	125.18	125.17	137.09

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 7.--Bicycle tires: U.S. imports for consumption, by principal sources, 1975-79 and January-September 1979, and January-September 1980

Source	1975	1976	1977	1978	1979	January-September-- 1979	1980
	Quantity (units)						
Taiwan	3,924,465	9,457,974	9,057,844	8,561,969	11,754,691	8,449,071	10,051,640
Kor Rep	2,640,035	5,220,751	8,256,445	8,135,153	9,251,824	6,382,774	7,409,461
Japan	1,563,182	1,691,182	1,796,551	1,237,189	1,440,112	1,022,370	1,463,970
France	198,639	130,171	112,204	81,199	100,541	67,667	114,856
Italy	155,048	100,228	216,092	97,574	49,227	41,600	63,863
India	0	387,100	656,440	1,039,600	332,800	332,800	47,150
All other	1,605,003	872,129	219,369	407,219	202,735	105,324	252,700
Total	10,086,372	17,859,455	20,314,945	19,639,823	23,131,930	16,401,606	19,402,840
	Value (1,000 dollars)						
Taiwan	3,576	8,259	8,242	7,406	12,304	8,197	14,841
Kor Rep	2,502	5,024	7,392	7,427	9,699	6,450	9,943
Japan	2,109	2,426	2,877	2,518	2,936	2,107	3,414
France	562	347	378	332	400	278	438
Italy	895	724	1,172	705	307	263	582
India	-	262	532	794	261	261	47
All other	1,679	947	368	769	398	178	514
Total	11,324	17,989	20,962	19,951	26,305	17,734	29,774
	Unit value						
Taiwan	$0.91	$0.87	$0.91	$0.87	$1.05	$0.97	$1.48
Kor Rep	0.95	0.96	0.90	0.91	1.05	1.01	1.34
Japan	1.35	1.43	1.60	2.04	2.04	2.06	2.33
France	2.83	2.66	3.37	4.08	3.98	4.10	3.75
Italy	5.78	7.23	5.43	7.23	6.24	6.33	9.23
India	-	0.68	0.81	0.76	0.79	0.79	1.01
All other	1.05	1.09	1.68	1.58	1.96	1.69	2.05
Average	1.12	1.01	1.03	1.02	1.14	1.08	1.53

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 8.--Bicycle tires: U.S. imports by certain world areas including designated GSP countries,

Item	1976	1977	1978	1979	Jan.-Sep. 1980	Jan.-Sep. 1980 percentage distribution
	Quantity (units)					
Gross imports	17,859,455	20,314,945	19,639,823	23,131,930	19,402,840	100
26 developed ctries, total	2,687,807	2,302,366	1,874,922	1,767,940	1,840,789	9
GSP countries, total	15,171,125	18,011,109	17,764,350	21,363,830	17,531,251	90
Taiwan	9,457,974	9,057,844	8,561,969	11,754,691	10,051,640	52
Kor Rep	5,220,751	8,256,445	8,135,153	9,251,824	7,409,461	38
India	387,100	656,440	1,039,600	332,800	47,150	1/
Hg Kong	6,250	3,020	8,200	21,000	21,000	1/
Singapr	0	0	0	1,400	2,000	1/
Bngldsh	0	0	0	2,100	0	
Sri Lka	0	0	0	15	0	
Mexico	0	0	2,380	0	0	
Other GSP	99,050	37,360	17,048	0	0	
Other	523	1,470	551	160	100	1/
	Value (1,000 dollars)					
Gross imports	17,989	20,962	19,951	26,305	29,776	100
26 developed ctries, total	4,358	4,747	4,291	4,004	4,875	16
GSP countries, total	13,629	16,205	15,654	22,298	24,868	84
Taiwan	8,259	8,242	7,406	12,304	14,841	50
Kor Rep	5,024	7,392	7,427	9,699	9,943	33
India	262	532	794	261	47	1/
Hg Kong	7	3	7	26	27	1/
Singapr	-	-	-	6	9	1/
Bngldsh	-	-	-	2	-	
Sri Lka	-	-	-	2/	-	
Mexico	-	-	7	-	-	
Other GSP	77	36	12	-	-	
Other	2	9	6	2	1	1/

1/ Less than 0.5 percent
2/ Less than 500 dollars

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 9.--Tubes: U.S. imports for consumption, by principal sources, 1975-79 and January-September 1979, and January-September 1980

Source	1975	1976	1977	1978	1979	January-September-- 1979	1980
	Quantity (units)						
Taiwan	6,328,311	15,424,100	15,673,305	17,246,038	23,153,222	17,094,206	22,419,052
Italy	1,080,864	1,283,432	1,012,602	1,021,598	914,016	747,441	518,552
Japan	2,164,110	2,678,174	2,935,568	2,706,910	2,053,215	1,601,071	1,609,519
Kor Rep	5,776,114	10,124,400	13,823,394	13,528,763	12,975,592	9,749,881	10,168,234
France	469,667	256,304	287,164	253,196	498,717	326,261	643,890
Canada	54,342	211,454	95,709	341,745	265,962	125,896	103,914
All other	1,641,184	1,938,216	1,079,387	2,035,337	1,324,110	1,101,141	1,048,852
Total	17,514,592	31,916,080	34,907,129	37,133,587	41,184,834	30,745,897	36,512,013
	Value (1,000 dollars)						
Taiwan	3,486	7,999	8,532	9,980	14,407	10,212	17,757
Italy	7,920	9,315	7,726	9,306	10,701	8,705	6,684
Japan	2,889	5,233	6,316	9,028	9,209	7,097	6,668
Kor Rep	2,615	4,874	7,294	7,543	9,122	6,850	10,521
France	1,795	1,468	1,689	1,690	4,949	3,525	4,216
Canada	760	2,101	1,308	3,808	3,054	1,535	1,747
All other	2,763	3,776	1,849	3,591	6,048	4,346	5,957
Total	22,228	34,768	34,712	44,946	57,489	42,270	53,550
	Unit value						
Taiwan	$0.55	$0.52	$0.54	$0.58	$0.62	$0.60	$0.79
Italy	7.33	7.26	7.63	9.11	11.71	11.65	12.89
Japan	1.34	1.95	2.15	3.34	4.49	4.43	4.14
Kor Rep	0.45	0.48	0.53	0.56	0.70	0.70	1.03
France	3.82	5.73	5.88	6.67	9.92	10.80	6.55
Canada	13.98	9.94	13.67	11.14	11.48	12.19	16.81
All other	1.68	1.95	1.71	1.76	4.57	3.95	5.68
Average	1.27	1.09	0.99	1.21	1.40	1.37	1.47

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 10.--Bicycle tire tubes: U.S. imports by certain world areas including designated GSP countries, 1976-79 and January-September 1980

Item	1976	1977	1978	1979	Jan.-Sep. 1980	Jan.-Sep. 1980 percentage distribution
	Quantity (units)					
Gross imports	24,144,761	29,141,575	29,193,302	33,320,353	30,380,519	100
26 developed ctries, total	2,398,187	1,855,862	1,239,658	577,430	950,343	3
GSP countries, total	23,746,574	27,285,713	27,953,644	32,741,323	29,375,576	97
Taiwan	13,327,778	13,282,734	14,177,953	20,179,346	19,796,114	65
Kor Rep	10,014,446	13,347,579	12,717,145	12,179,360	9,361,662	31
India	387,100	654,200	1,048,446	361,617	65,000	1/
Hg Kong	3,250	1,200	10,000	21,000	152,800	1
Mexico	0	0	100	0	0	
Jamaica	3,000	0	0	0	0	
Portugl	0	0	0	0	0	
Israel	11,000	0	0	0	0	
Other	0	0	0	1,600	0	
	Value (1,000 dollars)					
Gross imports	11,864	13,571	13,749	18,326	21,245	100
26 developed ctries, total	1,348	1,249	853	533	956	4
GSP countries, total	10,516	12,321	12,895	17,791	20,958	96
Taiwan	5,905	6,089	6,630	11,046	14,067	64
Kor Rep	4,486	5,996	5,896	6,605	6,750	31
India	119	236	362	130	35	1/
Hg Kong	1	1	8	10	106	1/
Mexico	-	-	2/	-	-	
Jamaica	1	-	-	-	-	
Portugl	-	-	-	-	-	
Israel	4	-	-	-	-	
Other	-	-	-	2	-	

1/ Less than 0.5 percent
2/ Less than 500 dollars

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 11.--Tires and tubes: U.S. exports of domestic merchandise, by principal markets, 1975-79, January-September 1979, and January-September 1980

Market	1975	1976	1977	1978	1979	January-September-- 1979	1980
	Quantity (1,000 units)						
Canada	8,192	5,548	6,318	7,629	6,516	4,240	4,142
Mexico	362	136	60	418	1,303	594	1,624
Venez	460	937	1,473	1,542	1,145	831	2,240
S Arab	505	573	584	462	869	431	428
U King	147	62	168	702	1,344	851	677
Austral	397	218	249	730	717	481	407
All other	4,168	3,351	3,045	5,524	7,024	4,821	4,730
Total	14,231	10,825	11,916	17,009	18,918	12,250	14,247
	Value (1,000 dollars)						
Canada	140,375	93,239	113,759	94,715	97,470	66,325	60,392
Mexico	17,418	9,865	4,968	10,981	42,070	18,749	59,940
Venez	17,318	23,137	44,266	43,747	30,131	21,275	63,004
S Arab	5,321	7,486	11,336	10,110	24,993	13,105	16,016
U King	3,959	2,265	4,875	9,108	12,848	6,997	14,620
Austral	7,391	5,065	7,386	8,902	9,538	5,614	7,826
All other	98,451	76,766	98,259	102,560	135,747	84,285	117,925
Total	290,232	217,822	284,849	280,123	352,797	216,351	334,724
	Unit value						
Canada	$17.13	$16.81	$18.01	$12.41	$14.96	$15.64	$14.58
Mexico	48.12	72.33	62.22	26.26	32.29	31.57	36.91
Venez	37.62	24.69	30.06	28.36	26.32	25.59	28.12
S Arab	10.54	13.06	19.41	21.88	28.76	30.38	37.46
U King	26.97	36.63	28.94	12.97	9.56	8.22	21.61
Austral	18.61	23.24	29.72	12.19	13.30	11.68	19.24
All other	23.62	22.91	32.27	18.57	19.33	17.48	23.97
Average	20.39	20.12	23.90	16.47	18.65	17.66	23.49

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 12.--Truck and bus tires, new: U.S. exports of domestic merchandise, by principal markets, 1978 and 1979, January-September 1979, and January-September 1980

Market	1978	1979	January-September	
			1979	1980
Quantity (units)				
Venez.	196,585	167,838	127,310	398,199
Canada	148,661	685,319	406,936	1,345,750
S Arab	46,891	124,746	63,134	94,369
Ecuador	12,022	14,606	7,955	18,501
Panama	19,294	19,902	16,978	13,163
Dom Rep	11,142	14,329	10,492	9,051
All other	270,488	535,111	317,625	757,167
Total	705,083	1,561,851	950,450	2,606,620
Value (1,000 dollars)				
Venez.	12,140	6,773	4,657	18,842
Canada	9,756	14,978	10,543	9,562
S Arab	2,683	7,627	4,116	5,244
Ecuador	707	714	381	1,207
Panama	791	786	635	757
Dom Rep	712	997	631	521
All other	17,668	39,800	22,253	59,552
Total	44,457	71,675	43,136	95,752
Unit value				
Venez.	$61.75	$40.35	$36.58	$47.31
Canada	65.63	21.86	25.91	7.10
S Arab	57.22	61.14	65.19	55.27
Ecuador	58.81	48.38	47.93	65.24
Panama	41.30	39.49	37.40	57.51
Dom Rep	63.90	69.58	57.28	57.56
All other	65.32	74.38	70.06	78.78
Average	63.05	45.89	45.44	36.73

Source: Compiled from official statictics of the U.S. Department of Commerce.

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Table 13.-- Bicycle tires: U.S. exports of domestic merchandise, by principal markets, 1978 and 1979, January-September 1979, and January-September 1980

Market	1978	1979	January-September-- 1979	1980
	Quantity (units)			
Canada	5,017	13,028	12,040	5,705
Austral	0	3,722	0	1,551
S Arab	0	220	30	6,456
U King	10	73	8	504
FR Germ	0	623	623	0
Mexico	3,687	133	133	600
All other	162	1,639	1,611	5,708
Total	8,876	19,638	14,447	20,564
	Value (1,000 dollars)			
Canada	40	188	72	67
Austral	-	34	-	11
S Arab	-	21	1	168
U King	1	17	3	3
FR Germ	-	13	13	-
Mexico	13	6	6	3
All other	6	11	9	58
Total	61	211	104	310
	Unit value			
Canada	$8.05	$8.27	$5.97	$11.78
Austral	-	8.63	-	7.36
S Arab	-	96.37	35.33	25.91
U King	100.00	237.84	345.25	5.00
FR Germ	-	21.32	21.32	-
Mexico	3.63	45.26	45.26	5.28
All other	38.81	6.90	5.25	10.13
Average	6.86	10.75	7.17	15.10

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 14.--Passenger car tires: U.S. exports of domestic merchandise, by principal markets, 1975-79, January-September 1979, and January-September 1980

Market	1975 1/	1976 1/	1977 1/	1978	1979	January-September-- 1979	January-September-- 1980
	Quantity (units)						
Canada	3,755,219	2,334,814	2,825,946	2,261,596	1,988,839	1,585,938	815,641
Venez	112,886	391,402	826,498	691,953	455,643	384,487	1,816,338
Mexico	95,419	37,398	38,221	33,336	338,981	186,552	382,373
S Arab	82,101	113,874	157,894	186,426	273,896	181,295	161,582
Japan	411,887	309,085	186,926	209,628	227,284	178,454	186,876
Kuwait	62,615	89,248	155,880	133,198	243,268	148,628	283,897
All other	820,706	914,459	1,187,329	1,161,253	1,329,454	846,182	924,352
Total	5,337,953	4,190,280	5,269,866	4,577,390	4,868,397	3,351,448	4,531,879
	Value (1,000 dollars)						
Canada	82,304	54,930	68,489	52,744	46,377	33,824	23,725
Venez	2,582	8,263	19,340	17,831	12,768	10,762	31,668
Mexico	1,978	856	626	962	10,974	3,451	11,789
S Arab	2,015	3,139	5,010	3,015	9,282	5,796	5,938
Japan	9,111	6,983	5,871	6,453	7,862	6,167	4,162
Kuwait	1,336	1,622	3,626	3,000	6,137	3,521	5,069
All other	16,931	19,008	24,503	30,171	37,189	23,297	29,988
Total	116,258	94,808	129,386	114,177	130,429	86,819	112,251
	Unit value						
Canada	$21.92	$23.53	$24.21	$23.32	$23.32	$22.46	$29.89
Venez	23.04	21.11	23.40	25.77	28.02	28.00	31.16
Mexico	20.73	22.88	20.72	28.84	33.17	32.39	38.72
S Arab	24.54	27.56	31.89	28.33	33.69	31.97	36.75
Japan	22.13	22.59	31.41	30.79	34.68	34.56	38.95
Kuwait	21.34	18.17	23.38	22.52	25.23	23.69	24.86
All other	20.63	20.79	24.93	26.46	27.91	27.53	32.43
Average	21.77	22.62	24.46	24.94	26.98	25.91	31.79

1/ Includes data for motorcycle tires.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 15.--Tubes: U.S. exports of domestic merchandise, by principal markets, 1975-79, January-September 1979, and January-September 1980

Market	1975	1976	1977	1978	1979	January-September-- 1979	1980
	Quantity (units)						
Canada	1,339,141	1,176,136	885,476	891,014	664,105	496,398	466,975
Mexico	101,700	36,307	22,408	113,053	570,163	268,313	661,542
S Arab	407,706	447,970	382,310	296,775	368,238	133,152	144,688
Venez	75,666	271,714	209,334	469,224	352,056	191,979	697,981
Colomb	4,485	33,378	20,589	63,629	166,375	88,524	245,567
U King	86,803	15,305	40,075	45,477	126,759	29,439	118,872
All other	1,982,447	1,186,413	736,075	1,135,521	1,327,905	815,728	899,388
Total	3,997,948	3,167,223	2,298,267	3,014,693	3,575,601	2,023,533	3,235,013
	Value (1,000 dollars)						
Canada	5,205	4,624	3,837	3,761	5,065	3,612	3,556
Mexico	762	434	168	740	3,284	2,071	3,633
S Arab	925	1,315	1,425	1,644	2,453	915	1,157
Venez	836	1,325	1,347	3,064	2,249	1,109	5,545
Colomb	49	123	153	273	814	448	496
U King	173	88	364	511	647	240	895
All other	7,660	5,335	4,935	6,718	9,211	5,301	8,968
Total	15,612	13,243	12,229	16,711	23,724	13,775	24,251
	Unit value						
Canada	$3.89	$3.93	$4.33	$4.22	$7.63	$7.28	$7.62
Mexico	7.49	11.95	7.52	6.54	5.76	7.72	5.49
S Arab	2.27	2.94	3.73	5.54	6.66	6.87	7.99
Venez	11.05	4.87	6.44	6.53	6.39	5.78	7.94
Colomb	11.01	3.69	7.41	4.29	4.90	5.06	2.02
U King	2.00	5.73	9.08	11.24	5.10	8.15	7.53
All other	3.86	4.50	6.69	5.92	6.94	6.60	9.97
Average	3.90	4.18	5.32	5.54	6.64	6.81	7.50

Source: Compiled from official statistics of the U.S. Department of Commerce.

SUMMARIES OF TRADE AND TARIFF INFORMATION

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COMPLETE LIST OF SUMMARIES PUBLISHED TO DATE IN SCHEDULE 7

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